

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

Copy from

FILE 145

MONTHLY REPORT

for

A P R I L,

1920.



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1920.

A P R I L

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OFFICE OF THE SUPERINTENDENT

May 6, 1920.

Dear Sir:

The following is my report on conditions in the Yellowstone National Park, and on the operation of the park, for the month of April, 1920.

GENERAL CONDITIONS:

The general conditions of the weather throughout the month was disappointing to everyone interested in the welfare of the wild animals dependent upon grass for subsistence, as it was to ranchers and stock owners in the nearby states. Following a winter of unusual length and severity which was most trying to wild animals and domestic stock depending upon winter range for subsistence, it was constantly cloudy and stormy, with a temperature too low most of the time to permit of much growth of forage, and while there was some advancement from the beginning to the end of the month, and some green grass was available at the end of the month for the animals, it was far from being enough to relieve the situation, and feeding had to be continued throughout the month and into May.

The mean temperature for the month was 30.6, which was an average of 6.4 degrees colder than normal for April; has never been exceeded, and only equalled once - in 1917, when the mean was the same. The lowest temperature occurred on April 1st, 3 degrees below zero, and this was the lowest temperature ever recorded in April. Except for a few days at the beginning of the second week, the temperature was constantly below normal throughout the month.

The total precipitation was 1.33, which is 0.05 inches less than normal, but most of this came in the form of light daily snows or rains, the snow usually melting as it came, or soon afterwards. Twenty-one days the precipitation was sufficient to be measurable. There were but two clear days during the month, and but three days on which light rain or snow did not fall.

Of the total precipitation, there were 4.8 inches of snow, which was below the average for April, but the

number of days on which snow fell was unusually large. At Mammoth the snow cover diminished slowly from 18.8 inches on April 1st, to a trace on the 22nd, and there was no more than a trace at the end of the month. The thawing conditions, while very slow in action as compared to normal, did uncover much range in the vicinity of Gardiner, Mammoth, and along the north line of the park on the lower levels, and the grass had made a start at the end of the month.

More than the usual amount of wind occurred during the month, and the maximum velocity of 42 miles per hour from the southwest on April 14th has been equalled but once in April, in 1913, when a 44 mile wind from the same direction was recorded.

There were fewer clear days and less sunshine than for any April recorded.

The Monthly Meteorological Summary, furnished by the local office of the Weather Bureau, is inclosed.

The following comparison of snow on the ground at different stations March 31 and April 30 will give some idea of the prospects of opening the park roads:

	<u>4-30-20</u>	<u>3-31-20</u>
Lake Ranger Station	47 in.	64 in.
Soda Butte Ranger Station	20 "	32 "
Tower Falls Ranger Station	10 "	29 "
Buffalo Farm	12 "	36 "
Canyon Ranger Station	48 "	70 "
Horric Ranger Station	48 "	54 "
Upper Basin Ranger Station	35 "	70 "
Riverside Ranger Station	26 "	50 "
Gallatin Ranger Station	30 "	48 "
Mammoth	None.	19 "
Gardiner Ranger Station	None.	None.

A joint expedition participated in by this office, the Yellowstone Park Transportation Company, Yellowstone Park Camps Company, George Whittaker, and G. A. Hamilton, made an attempt to break the road for teams as far as Golden Gate on April 26th, but got through with the team for less than two miles and reported that it was a little too early to make any showing due to heavy drifts. An expedition sent out the afternoon of May 2nd succeeded in getting the team and wagon as far as Silver Gate, and leading the team, without wagon, over and around the drifts to Golden Gate.

The beginning of May finds a body of practically four feet of snow on the road from Norris Station to Lake, via Cañon, with drifts much deeper in places; and from Golden Gate to Norris, an average of a little more than three feet, with deeper drifts in places. These conditions give better prospects of opening the roads than they did in 1917, when they were opened with difficulty around the loop for the opening of the tourist season June 20th.

Travel.

The road from Gardiner to Headquarters was open for motor travel throughout the month, and was used extensively by our trucks, and those of the Hotel Company and Camps Company in hauling supplies. Use of heavy trucks kept it badly rutted, and it was necessary to run a grader over it occasionally to smooth out the ruts, and to drain it in places.

The road towards the Northeast corner was open for teams traveling on top of the snow, as far as Tower Falls Station throughout the month, and on as far as Cooke for very light travel until the latter part of the month, when the melting condition of the drifts made it very difficult to get over at all, and the Cooke City mail contractor had much trouble getting the mail through. All other park roads were blocked with snow. Sixteen people entered the park during the month, as shown by the Chief Ranger's report of travel inclosed, but these could hardly be classed as tourists as they were for the most part on business.

Labor and Supply Market.

We had occasion to hire a few laborers for urgent repairs to roads and bridges, and the Yellowstone Park Camps Company, the Yellowstone Park Transportation Company, and the Yellowstone Park Hotel Company also had occasion to hire men to begin their efforts towards getting in supplies and preparing for the coming tourist season. Such men as were needed have been found thus far without trouble, and at last summer's wage scale.

These concessioners are also getting in their supplies, and report most of them difficult to secure and higher in price than last year. This is especially true of sugar, potatoes, and forage supplies. Sugar is about \$16 per cwt., f. o. b. San Francisco; potatoes are \$6 per cwt. and up in the local market; Hay went to \$50 per ton on April 11th.

following a storm and continued cold backward spring weather, and was hard to get at any price.

II. PERSONNEL.

Employees.

On April 1st there were 54 employees on duty under this office in the park, and on April 30th there were 55. Below is given a list of the number of employees serving under appointment, with a general statement of the kind of work performed by each class.

<u>No.</u>	<u>Class.</u>	<u>Kind of work performed.</u>
1	Asst. Engineer	Office engineering, except 2 days on leave.
1	Blacksmith	General blacksmith work. Shoeing draft animals and ranger saddle horses, and overhauling tools and equipment.
5	Clerks	1 disbursing agent and purchasing clerk; 1 on orders, proposals and vouchers; 1 stenographer, files and revenues; 1 on payrolls and timekeeping; 1 on cost accounting and in charge of storehouse. At odd moments clerks assisted Ranger Skinner in indexing library, and tabulating notes on wild animals, birds, and other data relating to the establishment of the proposed museum.
1	Steward and Master of Transportation	In charge of all transportation, including shops and garage.
3	Electricians	1 in charge of power plant who operated and did necessary line work; 2 assistants who operated regular shifts including Sundays.

<u>No.</u>	<u>Class.</u>	<u>Kind of work performed.</u>
1	Buffalo Keeper	In charge of tame buffalo herd, feeding and caring for them.
2	Foremen	1 in charge of stables, and spent most of month repairing tents and harness for next season's work. 1 in charge of engineering work from 12 to 30 of month.
1	Gen. Foreman	In charge construction work. Worked all month repairing and remodeling buildings at Headquarters.
1	Handyman	Worked in storehouse issuing supplies to families and runners , corrals, etc., and sorting over, moving and straightening up storehouses; also helped handle supplies from railroad.
1	Lineman	In charge of telephone system; did emergency work and installed instruments. Also ran light truck hauling freight or express from railroad to Headquarters when not otherwise engaged.
1	Watchman	Watchman at Headquarters. Made hourly patrols for fire at night, and kept fires up and cleaned up Headquarters building. Worked daily including Sundays.
1	Master Mechanic	On leave without pay 1st to 17th at noon.
1	Automobile mechanic	Worked on automobile and truck repairs.
1	Motorcycle mechanic	Worked on motorcycles 28th to 30th.
1	Plumber	In charge of general plumbing at Headquarters; did general repair work on plumbing.
1	Painter	Renovated quarters at Headquarters and painting motor cars.

<u>No.</u>	<u>Class.</u>	<u>Kind of work performed.</u>
1	Telegraph Operator	Sent and received Western Union telegrams; also put in regular shift as a switchboard operator, seven days a week.
1	Telephone Operator	Operated telephone switchboard.
1	Laborer	Miscellaneous work at Headquarters.
1	Chief Ranger	In charge of ranger force.
3	Asst. Chief Rangers	Assisting Chief Ranger. One in charge of southern district; two assisting with feeding wild animals.
6	1st class park rangers	In charge of ranger stations, on duty in Chief Ranger's Office, patrol duty in the park protecting wild animals, and feeding wild animals.
18	Park Rangers	ditto. Also one on duty until about middle of month protecting wild animals in Gallatin Game Preserve adjoining the park on the north.

The above employees were on duty, with the exception of the time they were on leave of absence.

In addition to the regular employees listed above the following were employed temporarily:

	<u>On Apr. 1.</u>	<u>On Apr. 30.</u>
Engineman, assisting with repairs to motor vehicles,	1	1
Teamster, general work at Headquarters, in stables, hauling, supplies, etc.,	<u>1</u>	<u>1</u>
	<u>2</u>	<u>2</u>

Laborer at Buffalo Farm assisting with buffalo April 5 to 30.

In addition to the above the following were employed temporarily on bridge work:

	<u>April 1st</u>	<u>April 30th</u>
2-horse teamster	1	2
4-horse teamster		1
6-horse teamster		1

	<u>April 1st</u>	<u>April 30th</u>
Foreman		1
Skilled laborer		1
Bridgeman		1
Laborer		5
Blacksmith helper		1

Leaves of absence.

During April annual leaves were granted as follows:

B. L. Stinnett,	Master Mechanic	1 to 17 (noon)	- 16 $\frac{1}{2}$ (*)
Chester A. Lindsley	Assistant Supt.	1 to 7	6
J. M. Dupuis	Park Ranger	3 to 14	10
C. O. Isner	Clerk	5 to 7	3
John Delmar,	Steward & Mstr of Trans.	7 noon to 8 noon	1
A. C. Neumann	Painter	8 noon to 9 noon	1
Leroy Hill, Fur.Clk. & Spl. Disb. Agt.		15 to 17	3
L. M. Mac Rae	Clerk	19 to 23	5
L. M. MacRae	Clerk	26 to 30	5
A. W. Burney	Asst. Engineer	15 to 16	2
C. J. Smith	Asst. Chief Ranger	20 to 23	4
C. J. Smith	Asst. Chief Ranger	26 to 28	3

Appointments.

John L. Cooper, Motorcycle Mechanic, \$120 per month and quarters, effective April 28th.

III. WORK COMPLETED.

(a) Construction of Physical Improvements.

No construction work was engaged in during the month.

(b) Maintenance and Repair of Physical Improvements.

Slight repairs to the road between Mammoth and Gardiner, 5 miles, were required during the month, draining, filling ruts with grader, etc.,

Towards the end of the month, it was discovered that one of the piers on the high steel bridge, 3 miles east of Mammoth, across Gardiner River, on the Tower Falls Road, had been undermined, and was in danger of going out. A small crew of men was at once organized to repair it, and by the end of the month had succeeded in building a cofferdam and replacing the concrete foundation of the pier that had been washed out. Fortunately, the bridge

had not settled and there was no damage whatever.

(c) Improvements by concessioners.

The Camps Company and Transportation Company both had considerable work under way during the month, as shown under another heading, but none was completed.

(d) Service to the Public.

Since the park had but few visitors during the month, this feature was inconsequential.

IV. WORK IN PROGRESS.

✓ The Yellowstone Park Transportation Company had a number of automobile mechanics employees constantly during the month, completing the moving of the shop to new quarters and installing machinery, and overhauling motor trucks and cars. Much was accomplished, but this work is so extensive that it will require steady efforts until the opening of the tourist season to complete.

✓ They also employed two painters, resuming the work of painting the cars, which was left off during the severe winter weather.

✓ This company also employed a considerable force of carpenters, remodeling their bunk houses at Mammoth, and this work is also still in progress.

✓ The Yellowstone Park Hotel Company employed two chinamen, who began the development of the vegetable garden on Gardiner River for supplying the hotels. A crew of men and a team were also employed for several days building a crib more than 300 feet long of planks and stones along the bank of the Gardiner River, to prevent the river from washing the garden away during high water. This Company received several carloads of supplies and had them hauled by motor trucks to Mammoth and stored.

✓ Mr. C. A. Hamilton, who owns and operates general stores at Upper Basin and Lake, was in the park most of the month, but inasmuch as the Lake and the Basin are still snowed in, he could not accomplish anything there so remained at Mammoth and assisted the Hotel Company in storing supplies.

✓ Pryor & Trischman resumed work where they left off last fall, of making improvements to their store building at Mammoth. The work of renovating, painting, etc., is still in progress. ✓

✓ The Yellowstone Park Camps Company maintained a large force of carpenters and laborers at Mammoth Camp, remodeling the camp for the approaching park tourist season. Most of the old tents have been torn down and made ready to be transferred to Lake Camp as soon as the roads are open, as the lake, which has been closed for two years past, is to be opened again this season. At Mammoth Camp the old-style tents are being replaced with tent cottages, with white asbestos roofs, arranged in rectangles containing eight single and three double rooms, around a court, in the center of which will be a suitable sanitary toilet. The capacity of each set of tents is to be 14 beds. The sets of tents are arranged in evenly spaced squares, with streets of suitable width between. ✓ Nine sets were partially completed during the month. This development of a tent city is in line with new plans for remodeling Mammoth Camp in accordance with plans approved by the Service, and contemplates eventually tearing down all service buildings, the main building, offices, etc., and erecting a new large building to house the office, amusement hall, dining room and kitchen, laundry, etc., but all of this cannot be accomplished before the opening of the season, as the company has an immense amount of construction work to do to get its camps in shape at Mammoth, Lake, and Tower Falls, for the opening of the tourist season, June 20th. ✓

✓ At Mammoth, this Company also began the important work of building a plunge bath for use of tourists and others, natural hot water for same to be taken from an excellent hot spring a little below Jupiter Spring terrace. The site was selected in the lower part of Mammoth Camp, and the excavation for the plunge and the ditch leading to it from the hot spring is well under way. Water from this same spring has been used in one of the government houses for baths for years, and has the appearance of being unusually fine. ✓ The plunge will be 40 by 60 feet in size, and 3 to 5½ feet in depth, and I am under the impression that it will be one of the finest in the West. It is their intention to complete it by the opening of the season, and later, possibly next fall, to cover it with a suitable building.

Y About the middle of April the Camps Company sent a crew of about five carpenters and laborers to Tower Falls to resume the work of construction of a new main building at that

camp, which was abandoned last fall on account of bad weather, and this work is progressing slowly.

Our shop force was engaged in overhauling motor transportation and keeping those in use in repair. The painter finished one Ford car and has another one under way, and spent the balance of his time renovating living quarters, kalsomining, painting, etc. The plumber was busy throughout the month repairing plumbing and keeping it in working condition. The main leading into Superintendent Albright's quarters was found to be frozen, as it was turned off during his absence for the winter, and had to be dug up and repaired.

The stable foreman, in addition to his general supervision of the stables, assisted in hauling supplies when they were received at Gardiner, assisted in using the grader for smoothing the road to the northern entrance, and the balance of his time was spent in repairing tents for next summer's use.

In addition to making the regular patrols throughout the park for the protection of wild animals, the ranger force did some patrolling in the forest reserve west of Yellowstone River along the park boundary; assisted in the care of the buffalo herd, and gave the usual winter attention to the feeding of the elk herds near Gardiner. They also disposed of the carcasses of the elk that died in the vicinity of the feeding grounds, and cared for the surplus horse herd, which was kept at Mammoth Hot Springs and fed.

On April 13th Assistant Chief Ranger Trischman and Ranger Frazier left Headquarters for a trip with Mr. Ramsey of the Chester-Outing Moving Picture Company to the Upper Basin and Canyon, where Mr. Ramsey secured motion pictures. They were still absent on this trip at the end of the month.

Assistant Chief Ranger Smith was relieved from his station at Gardiner, and after spending 7 days' leave (April 20 to 23 and 26 to 28) at Livingston, left at midnight on the 30th for Riverside Station, where he will resume his duties in charge of the Western Section of the park.

After a five day trip to Sportsman Lake, to investigate reported tracks of poachers, Rangers Douglas and Richards returned to Gallatin Station on April 12, and reported that there were no indications of poaching in that vicinity.

All employees were admonished to give the grounds in the vicinity of their quarters a good policing, and all debris

that had accumulated during the winter, except such as was still frozen to the ground, was gathered and hauled away.

V. WORK BEGUN.

The master mechanic and blacksmith began the work of overhauling the 75-horse power Holte Caterpillar tractor, and the construction of a snow-plow, in accordance with plans received from Superintendent Albright in California, to experiment with in clearing the roads of the park from snow. This work is still in progress, but is nearing completion.

Beginning the 15th of April, a man was employed with one of our teams discing and seeding the field at the northern entrance, and this work is still in progress. This field was seeded to timothy and alsike clover last spring, when it was seeded to oats as a nurse crop. The oats grew all right, but due to the dryness of the season, but little of the grass seed grew. As the field has been well cultivated for two years, it is not necessary to plow it, but a good discing with brushing with a heavy brush after the seed is sowed, should answer the purpose, but it is doubtful if much of a crop of hay will be grown on it this year.

A motorcycle mechanic was employed beginning April 28th, and is engaged in the important work of overhauling and putting in shape for summer road patrols, our fleet of motorcycles. This work will take several weeks.

Preparations to begin the work of putting in a log and rock crib at the Elk Fork Bridge, in the National Forest east of the park, were made to the extent of having drift bolts made in the blacksmith shop, and shipping these, with other supplies, by rail to Cody, Wyoming, to be hauled from there to the site.

VI. PLANS OR PROPOSED WORK.

The work of building a log and stone crib to protect the bridge across the Elk Fork in the East Forest Reserve, which is provided for by a special deficiency appropriation of \$3,000, was not begun in April, as anticipated, except for a few preparations at Headquarters, such as outlining the work, having drift bolts made in the shop, and shipping these with other supplies to Cody, Wyoming, from where they are to be hauled to the site. The actual work of making this crib will be begun early in May, as a small crew is already on its way to the site, from Cody, Wyoming. It is necessary to prosecute this work from the Cody

side, as the roads through the park are still blocked with snow.

It is proposed to build about 40 feet of log and stone cribbing on the Gardiner River at the high steel bridge, about 3 miles east of Headquarters, to protect the pier which was repaired in April from further damage from floods and drift wood.

A small crib, or a lot of heavy rocks, will also have to be placed along the bank of Gardiner River near the vegetable garden about two miles north of Headquarters, to prevent high water from washing out the main road.

The road to Gardiner will probably require minor repairs during the month, and there is considerable earth and rocks to be removed from it along the new road at the high cliffs.

It is proposed to commence the opening of the park roads from Mammoth towards the Canyon and Lake, in cooperation with the Hotel Company, the Camps Company, and general store concessioners George Whittaker and C. A. Hamilton, as all of these concessioners are anxious to get through as soon as possible as they have an immense amount of work to do at Lake and Canyon preparatory to the opening of the season, June 20th. It is hoped that the caterpillar tractor and snow-plow, which are being prepared, can be utilized to assist in the work of clearing this road of snow, though this is experimental.

It is proposed to repair and set up our gasoline storage tank at Gardiner, on a new site rented from Mr. H. W. Child near the railroad, which is better located for emptying from the car. This will require a concrete foundation.

Arrangements must be made to employ labor to improve the hay fields at the Buffalo Farm, and on Slough Creek, and to irrigate such meadows as require it at the Buffalo farm and at the northern entrance.

The lawns and grounds at Headquarters must be brushed and well policed, and also watered as soon as climatic conditions require.

The fences at the Buffalo Farm, at Mammoth around the buffalo pasture, and 4 miles on the north line west of Gardiner, must be gone over and repaired; the tame buffalo and surplus horses turned out on grass to save expensive hay as soon as

possible; and assistance must be given to the Park County (Montana) authorities and the citizens of Gardiner in repairing the road for twelve miles north of the park that was badly damaged by our heavy work of trucking hay in for elk during the past winter. In this connection, Assistant Engineer Burney and I joined the Gardiner City business men at their dinner held at Shaw & Powell Hotel, Gardiner, on April 28, 1920, and discussed with them the proposition of general repairs to this road, and establishing a model camp for motorists on park property close to the village of Gardiner. We also went over this road with them on April 29th, and made plans for its repair. But much of this work will be done by the regular employees at the Buffalo Park and park rangers.

Foreman L. L. Hill reported at Washington from leave of absence without pay, back to duty April 12, and arrived in the park for duty on April 16. He has since been engaged mostly in getting ready to do the work on the Elk Fork Crib, and is still in Cody and vicinity on this work, which he will turn over to Foreman White as soon as practicable.

Foreman William H. Ferrell was taken up for duty from furlough on April 19th, and is employed in assisting with road repairs, and overhauling the caterpillar tractor and making the snowplow for opening park roads. His services will also be needed soon to overhaul the road sprinkling system, which he is especially familiar with, due to long experience with it.

VII. POLICIES.

The only new policies adopted during the month were those contemplated by the revised general regulations of the park, which were approved to take effect March 1, 1920, and were received in April. The principal change immediately effective was that relating to fishing in park waters, which prohibits the taking of more than ten fish by one person in one day within two miles of the main belt line road, and a circular was issued calling attention of park employees to this particular provision.

VIII. COST OF OPERATION.

The cost report for the month of April is not yet complete, but will be forwarded as soon as practicable.

IX. OTHER MATTERS OF INTEREST.

Wild Animals.

The month was an especially trying one for all of our wild animals. After spending every cent available for purchasing hay to feed our elk, antelope, deer, and mountain sheep, during the months that are ordinarily severe, and even leaving a good margin for a reasonably late spring, we were confronted with the situation of being out of hay for them early in April, and a realization that the opening of spring was very much behind the normal and more hay would be needed to bring through several thousand animals that had been fed all winter at a cost of nearly forty thousand dollars. Never before was it ever necessary to feed the wild animals after April 1st, and seldom after March 1st, but with an average temperature of more than six degrees below normal during April, grass made but little progress in growing, and the animals were in a weak condition due to shortage of forage during the winter. It suddenly became very evident that if we were to save most of our herds of elk, more hay, probably about a hundred tons, must be had, and on April 9th I wired you to that effect. Your prompt action in the matter in appealing to private parties interested in the preservation of the elk, which lead to such gratifying immediate results saved the day, and your prompt replies by wire assuring assistance were also very essential, as the same conditions that required quick action for the game affected the situation of feeding stock among the farmers in all of the adjoining states, and the price of hay went up to .50 a ton over Sunday, and it became very scarce. On receipt of your reassuring telegrams I engaged the hay by wire, and would not have been able to have secured as much as was needed in time had I waited longer. A total of \$4703.00 was raised and sent to me for this purpose, contributed as follows:

Director Stephen T. Mather, National Park Service,.....	350.00
By National Parks Association,.....	553.00
By Mr. H. M. Blackmer, Midwest Refining Company, Denver, Colorado,.....	500.00
By William C. Gregg, of Hackensack, New Jersey,.....	2000.00
By Doctor William O. Stillman, from American Red Star Relief Association,.....	1500.00
Total.....	\$ 4703.00

Approximately 100 tons of hay were purchased with these funds, and the greater portion of it cost at the rate of .50 per ton plus freight from shipping point. A little that had been engaged previously and not delivered was transferred to this

account, and was secured at a less figure. A careful accounting will be made later, when all bills, including freight, have come in and been paid. This hay lasted until after the end of April, and the grass has now grown to the extent that it is no longer necessary to feed hay to the wild animals, and even the tame buffalo and the horses have been turned out to grass to save the high priced hay since May 1st.

It is most gratifying to know that these donations so liberally made served their purpose, as I am sure that without them the loss of life among our wild animals would have been enormous in April. Farmers, who were unable to get hay to supply the unlooked for need caused by the same conditions, either from its scarcity or because they did not have the money with which to buy at so high a figure, suffered a considerable loss either in the death of their cattle, or in selling at a heavy sacrifice.

Buffalo, wild herd. One buffalo calf from the wild herd has been reported by the buffalo keeper as feeding all winter with about 100 elk, on the opposite side of Lamar River from the Buffalo Farm. Ranger Winess, in charge of Lake Station, reported seeing wild buffalo during the month in his district as follows: 1 bull in fair condition at Turbid Lake on the 14th; 2 bulls in fair condition at Marys Bay on April 20th; and 26 assorted in Pelican Valley on April 27th.

Buffalo, tame herd. There was a total of 406 animals in this herd at the beginning of April. Two calves born on April 1st froze to death or were chilled so that they died soon after birth. An April 4th another calf was born, and they have been coming frequently since, until at the end of the month there were 26 calves living. The cows were held at the Buffalo Farm on Lamar River, and on April 17th it was reported that the supply of hay there would be exhausted by the end of the month, and no signs of there being any grazing. With great effort, about 8 tons were hauled out on sleighs from Mammoth, by Rangers Reese and Dupuis, and fortunately soon after the end of the month the snow had melted on the south side of the hills to such an extent that this amount of hay will suffice. The 127 head of bulls and young stock kept at Mammoth were fed 30 tons of baled hay, and have just recently been taken back to the Buffalo Farm where they will be placed with the balance of the herd. The tame herd now numbers, including the new calves, 432 animals.

On March 9th a work horse on Slough Creek was gored by a buffalo bull, but not seriously, and it well at this time.

Bears. Like the spring days, the bears are backward about coming out, although two were seen during the month, and tracks of others reported. Assistant Chief Ranger Harry Trischman, who accompanied Mr. J. A. Ramsey, the representative of Mr. C. L. Chester, who is taking moving pictures in the park, to the Upper Basin and Canyon, relates a most interesting account of a bear and an elk observed by the party at Upper Basin on April 19th. The party was waiting to get a moving picture of the Giant Geyser, which was about to play, when a cow elk in rather poor condition came on the scene, closely followed by an immense grizzly bear. A yell attracted their attention and the bear turned and came towards the party, some of which suddenly decided they had important business elsewhere and lost no time in getting away. But Trischman stood his ground and a second yell changed the course of the bear which again took up the chase of the elk. But she had taken advantage of the situation to escape, but being too tired and worn out to run far, she took refuge under the bridge across the Firehole River, which is close by and the bear did not succeed in again locating her, though he tried to do so. After the grizzly had finally abandoned the search and left, it was with considerable difficulty that the elk was driven from under the bridge so her picture could be taken. Trischman is satisfied that she would have furnished a supper for the grizzly had he not interfered.

Deer. About 200 deer were reported at Gardiner and around Headquarters, and they seemed to have stood the adverse conditions better than did the elk. Ten dead ones were reported for the month. The others are in fairly good shape for this time of the year.

Antelope. Eleven dead antelope were found during April by rangers on patrol from Gardiner Station. 200 were seen by Chief Ranger McBride near the north line on the 26th, in rather poor condition. Quite a number of the antelope are still outside of the park, but will soon return now that they can scatter and go up to higher ground.

Elk. The timely receipt of funds donated by citizens for hay for the elk saved a heavy loss among the northern herds. The number fed during the month in the vicinity of Gardiner dwindled from about a thousand the first of the month, to a hundred the last of the month, as they gradually left the feeding grounds and went up as the grass became more abundant. At Mammoth the number varied from about 400 the first of the month, to 100 at the close. In both cases the number did not dwindle much until nearly the end of the month.

Forty-six dead elk were removed from the feeding grounds at Gardiner during the month, and 49 dead ones were hauled away from the Mammoth feeding grounds during the same period. The Rangers making patrols from Gardiner reported 124 dead elk noted on patrols from that station, of which 30 were just outside the park line, which makes a total of 219 dead ones reported for the month of April, but of course there are many more that have died in the foothills that have not yet been discovered, though the general situation is very encouraging and we do not look for much further loss among them. Fifty were shipped to New Mexico on April 10th under your authority of March 12, but no report has been received as to the success of the shipment. This was really too late to ship elk under ordinary conditions, but there was a lot of trouble getting the express cars to handle them, resulting in nearly three weeks' delay. The proposed elk count has been abandoned for this season.

Mountain Sheep. Seven mountain sheep were reported in Gardiner Canyon and on Mount Everts, but no special effort was made to check up these animals during the month. They were in fair condition and apparently getting enough to eat. Two dead ones were found, apparently died from natural causes.

Moose. Seven moose were seen by Ranger Bisdor in his district during the month, in good condition. One was seen on the road between Mammoth and Tower Falls.

Carnivorous Animals. Rangers Anderson and Dewing devoted most of their time during the month of April to hunting wolves and coyotes. They killed 4 coyotes, one adult wolf, and one cross fox. In addition to these Dewing killed 8 wolf pups in a den near Tower Falls, and Anderson reports he has one wolf den closed up on Blacktail Deer Creek in such a manner that the wolves cannot escape but must die. Ranger Harr killed five wolf pups in a den near Tower Falls. This record of 14 wolves and an uncertain number in the den, is gratifying, as each wolf destroyed means much to the preservation of the elk, deer, antelope and sheep.

Mountain Lions. Mountain lions are evidently very scarce in the park, and have been so all winter. Reports of their sign are very scarce.

Grazing. Grazing improved to some extent during the month, and much ground was cleared of snow by thawing weather, at the lower levels along the north line of the park. The balance of the park still remains covered by a thick shroud of snow. At the end of April there was an appreciable amount of grass available for the elk, and most of them had left the feed-

ing grounds. By May 4th practically all of the elk had left the feeding grounds, and there was enough grazing to warrant turning out the horse herd and the tame buffalo.

Seasonal Changes.

Floral: On April 6th bitterroot plants appeared above ground. On the 17th clover leaves on the lawns at Mammoth. On the 28th buttercups in bloom near crossing of State line by Gardiner River.

Birds: On the 2nd desert horned lark appeared; on the 3rd mountain song sparrow appeared and began singing on the 16th; on the 4th snow bunting appeared; on the 5th a baldpate duck; on the 11th a Townsend solitaire; on the 12th a desert sparrow hawk and an osprey arrived; on the 13th a meadowlark arrived and began singing on the 19th, and on the 18th a Swainson hawk was seen; on the 22nd the first green-winged teal; on the 23rd a sharp-skinned hawk and a Brewer blackbird arrived; and on the 24th the first red-shafted flicker was seen. Bluebirds increased rapidly but the robins were very slow to attain abundance. Bluebirds began singing on the 7th and robins on the 23rd. On the 25th young nut-crackers were seen.

Animals: On the 4th the first buffalo calf in the tame herd and the first black bear seen. By the 8th most of the horn butts on bull elk had begun to swell. On the 13th a weasel seen still in the pure white coat. At the end of the month only one small elk and three spikes retaining the old horns to a hundred elk. One bull elk with new horns four inches long and the first time started; white-tail deer with one inch horns; mule deer with three inch horns; and jack rabbits quite brown with only under parts, tail, and ears white.

While several of the birds are early, the majority are late. Reckoning from these, the season is 9 days late.

Fish.

Fishing was good in Gardiner River below the mouth of Boiling River, and was enjoyed by a few residents. It was also good in Firehole River and at some points in Madison River, but there were few there to enjoy it.

The new regulations of the park, approved effective

March 1, were received, and the new limit of fish to 10 per day per person within two miles of the belt line road was brought to the attention of employees and park residents by a special circular.

Protection of Game.

The usual patrols of the winter were made by park rangers, from Headquarters and from park stations. A daily patrol along the north line was made from Gardiner Station by Ranger McLaughlin.

So long as necessity existed, the game preserve outside of the park west of Yellowstone River was patrolled by Assistant Chief Ranger Smith, and the opposite side of the river is still patrolled by the special forest rangers detailed by the Forest Service for that duty.

Arrests and violations of the law.

No violations of law were reported, and no arrests were made during the month.

Accidents and Casualties.

On April 21 Forest Ranger W. R. Johns and another Forest Ranger who with Johns is serving in the Absaroka National Forest in the special work of protecting the wild animals wintering outside of the park, had occasion to return from one of their patrols, through the park, and about 1½ miles inside of the park, on Hell-roaring Creek, they found the body of a man, the snow which covered him having melted so that a little of his clothing showed. He came to Mammoth and reported the details of his discovery on the following day, April 22, and I wired to you that night.

Park Rangers George Winn, of the Soda Butte Station, and Ralph Harr, of Tower Falls Station, were directed to go to the point, make full investigation and report, and bury the body near the point where it was found, as it was impracticable to move it under present winter conditions. This they did on April 24, the Burial Service being read by Ranger Winn from the Episcopal Prayer Book.

Due to snow conditions and lack of pack animals, it was found to be impracticable to convey lumber to the place for making a box, but the body was carefully wrapped in a strong canvas before burial, and this will last for several years in case of identification through any means.

The body was buried four feet deep, as a large rock was encountered at this depth, which prevented going deeper. The

grave is located about 1½ miles inside of the park from the north boundary, on the right bank of Hellroaring Creek. It is marked with stakes at the head and foot, and the tree near by is blazed.

A careful description of the man was taken, as follows:

Height about 5 feet 5 inches.

Weight about 120 pounds.

Age about 40 years.

Heavy black eyebrows.

Long, heavy black hair.

Black mustache.

He had on the following named clothing: One undershirt; four cotton overshirts; one blue serge coat; one red striped mackinaw coat; two pairs of underdrawers; one pair blue overalls; one brown and green checkered cap; two pairs of cotton socks on his feet, also some rags wrapped around his feet. He had a pair of tan shoes with cloth tops and rubber heels, but these he was carrying tied to his arm. His feet had been frozen and badly crippled. Aside from the above, there was positively no way to identify the man.

This incident explains the report made by Mr. C. O. Davis, of Gardiner, Montana, made to our rangers on January 31, to the effect that while he was trapping not far outside of the park line on Hellroaring Creek, he had found tracks of a man outside of the park and leading into the park on Hellroaring; that he found indications that this man had lived at the Forest Ranger's cabin on Hellroaring Creek for about a month, as he had consumed all the rations that had been placed in the cabin by the rangers for winter use. Also that the tracks and signs indicated that he was crippled, probably from frozen feet. He took the pains to follow the peculiar trail until he reached the park line, but Davis having firearms did not want to go into the park as he had no authority to carry arms unsealed in the park. He said he believed a dead man would be found in the park when the snow melted.

Ranger Harr, stationed at Tower Falls, was sent to this vicinity four times afterwards to investigate the report, but the deep snows had covered up all traces, and he found nothing to report. Also we had a report that a man who had been partially frozen had showed up at Chico Hot Springs and many thought this was the man whose trail Davis had reported.

The man was apparently a foreigner. There were no signs of violence, and it was apparent that he had perished from exposure and cold. A special report of this incident was made on April 30th.

Special Visitors.

Some of the most important special visitors to the park during April were as follows:

Mrs. Pryor, of the firm of Pryor & Trischman, returned from a trip of several weeks' absence from the park, with her father, Mr. Trischman.

Mr. C. A. Hamilton, who has general stores at Upper Basin and Lake Outlet, returned to Mammoth early in April, but as he cannot get out to the location of his stores except on snowshoes, he is waiting at Mammoth and assisting the Hotel Company with the work of receiving supplies for the summer.

Mr. W. M. Nichols, of the Yellowstone Park Transportation Company and Yellowstone Park Hotel Company, visited the park from their general offices in Helena, on April 7th and 8th, in connection with the business of these companies.

Mr. Howard Hays, General Manager, and his assistant general manager Mr. Moorman, visited the park from their general headquarters in Livingston, Montana, several times during the month, in connection with their extensive improvements at Mammoth Camp and Camp Roosevelt.

Mr. Jesse Nelson, Grazing Expert of the U. S. Forest Service Office in Washington, and Mr. Ernest Shaw, Supervisor of the Absaroka National Forest, in Livingston, Montana, called on us April 10th, in connection with the special care and feeding of the elk herds along the north line, and the proposed count of the herds.

Motion Pictures.

The only motion picture representative in the park during the month was Mr. J. A. Ramsey, representing Mr. C. L. Chester, of 120 W. 41st Street, New York, who has been here since March 12th. Every assistance practicable has been given Mr. Ramsey, and he reports he is having success in getting some excellent park pictures of animals, geysers, etc. Assistant Chief Ranger Harry Trischman and Ranger Frazier accompanied him on a trip on skis to Upper Basin and Canyon, leaving Mammoth on April 13th. They returned to Mammoth on May 5th and Mr. Ramsey still has a few more pictures to get before he leaves the park.

Miscellaneous.

Entertainments. Free picture shows were held at the Post Exchange auditorium weekly, under a cooperative arrangement

between park employees and the residents of Gardiner. First-class pictures were shown.

Religious services were held twice during the month under the direction of Rev. J. F. Fritchard, and Christian Science services were held weekly on Sunday afternoons.

X. RECEIPTS AND REMITTANCE.

The usual report of monies collected, due and transmitted, on the regular blank forms, is inclosed, together with money orders and check for the amount remitted, - \$7.50. Please acknowledge receipt.

Cordially yours,

GEORGE A. HENRY

Acting Superintendent.

The Director,
National Park Service,
Department of the Interior,
Washington, D. C.

Inclosures:

CAL:JEM